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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,097	08/28/2003	Eun Seong Seo	2080-3-179	7715

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EXAMINER
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BLACKMAN, ROCHELLE ANN J

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/651,097	<b>Applicant(s)</b> SEO ET AL.	
	<b>Examiner</b> Rochelle Blackman	<b>Art Unit</b> 2851	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 January 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "rear mirror is a spherical mirror" in claim 18 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

The disclosure is objected to because of the following informalities: on pg. 5, paragraph [30], lines 2 and 3, - -or- - should be placed after "spherical", or "non-spherical" on line 3 should be omitted; on pg. 6, paragraph [35], line 1, "screen 12" should be - -screen 13- -. Appropriate correction is required.

***Claim Objections***

Claim 12 is objected to because of the following informalities: on line 7 of the claim, "an" should be - -a- -. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monson et al. (U.S. Patent No. 6,388,810).

Regarding claim 12, Monson discloses a projection system (see FIGS. 1-5) comprising: a projection lens (see 11 of Figs. 1-5 – the "projection lens" 11 is capable of projecting light parallel to "screen" 16 or 21 in all of the figures. Light ray 13a is parallel to screen 21 in FIG. 4 and parallel to screen 16 in Fig. 5) for enlarging and projecting an image and for projecting light parallel to a screen; and a rear mirror (see 14, 25, 30 of

FIGS. 1-5) for displaying an reflected image through the optical element on a screen (see 16, 21 of FIGS. 1-5), the rear mirror being tilted at an angle of 90-130 degrees from a horizontal line (see position of 14, 25, and 30 in FIGS. 1-5).

Regarding claim 13, Monson discloses wherein the optical element is disposed at an upper portion of the projection lens (see 12 in FIGS. 1-4)

Regarding claim 14, Monson discloses wherein the rear mirror is tilted at an angle of 90-110 degrees from a horizontal line (see "rear mirror" 14, 25, and 30 and "screen" 16 in FIGS. 1-5).

Regarding claim 15, Monson discloses wherein a tilt-angle difference between the rear mirror and the screen ranges 0-40 degrees (see "rear mirror" 14, 25, and 30 and "screen" 16 in FIGS. 1-5).

Regarding claim 16, Monson discloses wherein the optical element is disposed at an upper portion between the rear mirror and the screen"(see 12 in FIGS. 1-4).

Regarding claim 17, Monson discloses wherein the rear mirror is a planar mirror (see "rear mirror" 14 in FIGS. 1, 2, and 5).

Regarding claim 18, Monson discloses wherein the rear mirror is a spherical mirror (see "rear mirror" 25, 30 of FIGS. 3 and 4).

Regarding claim 19, Monson discloses wherein the rear mirror is a non-spherical mirror (see "rear mirror" 14 in FIGS. 1, 2, and 5).

Monson does not appear to disclose the optical element being formed of a "convex mirror".

Monson teaches an image produced by imager 11 can be enlarged or reduced by the utilization of convex or concave mirrors as part of the display system and uses a convex mirror 25 as a rear mirror in a projector system (see FIG. 3 and col. 5, lines 14-16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a convex mirror in place of planar or non-spherical mirror 12, which is positioned opposite the projection lens in the projector system of the Monsoon reference, in order to enlarge an image produced by the imager 11.

### ***Response to Arguments***

Applicants' arguments filed January 4, 2005, with respect to the rejection of claims 12-19 over Monson et al. (U.S. Patent No. 6,388,810), have been fully considered but they are not persuasive.

Applicants argue, on pg. 5 under REMARKS, Monson does not teach or suggest projecting light parallel to the screen in combination with a convex mirror position opposite the projection lens.

Examiner disagrees and directs applicants' attention to light ray 13a in FIGS. 4 and 5. It is clear light ray 13a is parallel to screen 21 in FIG. 4 and parallel to screen 16 in FIG. 5. Even if no parallel light rays were illustrated, "projection lens" 11 is capable of "enlarging and projecting an image" and "projecting light parallel to a screen". The

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illustrated light rays in FIGS. 1-4 are not the only light rays that are projected from the "projection lens" 11. Any line drawn parallel to screen 16 or 21 from "projection lens" 11 towards and touching mirror or "optical element" 12 in FIGS. 1-5 represents a projected light ray parallel to screen 16 or 21. In addition, as stated above, Monson teaches the image "projection lens" 11 can be enlarged or reduced by the utilization of convex or concave mirrors as part of the display system and Monson already uses a convex mirror 25 as a rear mirror in a projector system in FIG. 3. Accordingly, Monson still reads on the claimed invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB

A handwritten signature in black ink, appearing to read "Judy Nguyen", with a stylized, flowing script.

**JUDY NGUYEN**  
**SUPERVISORY PATENT EXAMINER**